



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,593	12/04/2003	Abdus Suttar Khan	033275-422	6912
21839	7590	02/23/2006		
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER VAN, LUAN V	
			ART UNIT 1753	PAPER NUMBER

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/726,593

Applicant(s)

KHAN ET AL.

Examiner

Luan V. Van

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment of January 9, 2006 does not render the application allowable.

Status of Objections and Rejections

The rejection of claim 2 is obviated by Applicant's cancellation.

All rejections from the previous office action are withdrawn.

New rejections under 35 U.S.C. 103(a) are necessitated by the amendments.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11, 12, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are rejected as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The independent claims already recite the limitation of a single crystal article and a directionally solidified article.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-5 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Foster '205.

Regarding claim 1, Foster '205 teaches a method of depositing a MCrAlY-coating on the surface of a single crystal article, such as a nickel base superalloy, the method comprising the steps of coating the article only at a local area with the MCrAlY-coating by an electroplated method (column 7 lines 58-62). The gamma/gamma prime and gamma/beta MCrAlY-coating is a product made by the process of electroplating. Since the MCrAlY-coating of Foster '205 is made by the same process as that of the instant claim, the MCrAlY-coating of Foster '205 would be either a gamma/gamma prime or gamma/beta MCrAlY-coating. The instant disclosure fails to disclose any processing conditions that would distinguish the MCrAlY-coating of the instant claims from that of Foster '205. Foster '205 thus meets all the limitations of this claim.

Regarding claim 3, Foster '205 teaches coating the article only at a local area with the MCrAlY-coating by an electroplated method (column 7 lines 58-62).

Replication of the electroplating method at different local areas on the surface of the article is not patentable unless a new and unexpected result is produced.

Regarding claims 4 and 5, Foster '205 teaches during the step of coating the article only at a local area with the MCrAlY-coating by an electroplated method the areas not to be coated are masked with wax (column 7 lines 58-62).

Regarding claim 7, Foster '205 teaches the method is used as a repair process for a used MCrAlY-coating. This is an intended use of the invention. The invention of Foster '205 is equally applicable to a repair process.

Regarding claim 8-10, Foster '205 teaches a gas turbine article, including a blade or vane (column 1 lines 9-14) is coated (also see Example).

Regarding claims 11-12, Foster '205 teaches superalloy gas turbine components may be directionally solidified or in the form of single crystal structures (column 1 lines 39-42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster '205 in view of Rigney et al. '447.

Foster '205 teach the method as described above.

Regarding claims 6 and 13, Foster '205 differs from the instant claim in that the reference does not explicitly different areas are coated with different coatings.

Rigney et al. '447 teach an "invention [which] provides a gas turbine component that is protected against environmental damage in different locations by different types of protective layers and coatings. The invention recognizes that different regions of the surfaces of the turbine components experience different types of degradation due to the environment, even though the different regions may be separated by a matter of inches or less. The understanding of the performance of different protective layers has progressed to the point that various protective layers may be optimized for performance under these different conditions of environmental damage" (column 1 line 63 -- column 2 line 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Foster '205 by coating different locations by different types of protective layers and coatings as taught by Rigney et al. '447, because different regions of the surfaces of the turbine components experience different types of degradation due to the environment.

Regarding claim 14-16, Foster '205 teaches a gas turbine article, including a blade or vane (column 1 lines 9-14) is coated (also see Example).

Regarding claims 17-18, Foster '205 teaches superalloy gas turbine components may be directionally solidified or in the form of single crystal structures (column 1 lines 39-42).

Claims 1, 3-5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster '205 in view of Foster UK App. '466 (assuming the gamma/gamma prime or gamma/beta phase is not an inherent property of the MCrAlY-coating).

Foster '205 teaches the method as described above. Foster '205 differs from the instant claim in that the reference does not explicitly mention that the MCrAlY-coating is a gamma/gamma prime or gamma/beta MCrAlY-coating.

Foster '466 teach "by electrodeposition there can be produced a coating in which particles forming one phase are dispersed in a matrix forming a second phase and such coating has very desirable properties, and surface finish. The composite coating may

Art Unit: 1753

be contrasted with those produced by spraying techniques" (page 1, lines 60-65).

Foster '466 teaches two phases are present in the coating, which clearly suggest that the MCrAlY-coating can be a gamma/gamma prime or gamma/beta MCrAlY-coating.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have recognized that the electrodeposited MCrAlY-coating of Foster '205 is a gamma/gamma prime or gamma/beta MCrAlY-coating as suggested by Foster '466.

Claims 6 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster '205 in view of Foster UK App. '466, and further in view of Rigney et al. '447 (assuming the gamma/gamma prime or gamma/beta phase is not an inherent property of the MCrAlY-coating).

Foster '205 teach the method as described above.

Regarding claims 6 and 13, Foster '205 differs from the instant claim in that the reference does not explicitly different areas are coated with different coatings.

Rigney et al. '447 teach an "invention [which] provides a gas turbine component that is protected against environmental damage in different locations by different types of protective layers and coatings. The invention recognizes that different regions of the surfaces of the turbine components experience different types of degradation due to the environment, even though the different regions may be separated by a matter of inches or less. The understanding of the performance of different protective layers has progressed to the point that various protective layers may be optimized for performance

Art Unit: 1753

under these different conditions of environmental damage" (column 1 line 63 -- column 2 line 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Foster '205 and Foster '466 by coating different locations by different types of protective layers and coatings as taught by Rigney et al. '447, because different regions of the surfaces of the turbine components experience different types of degradation due to the environment.

Response to Arguments

Applicants' arguments with respect the rejections under 35 U.S.C. 102(b) over Rigney et al. '447 have been considered but are moot in view of the withdrawal.

As stated in the office action above, Foster '205 teaches a method of depositing a MCrAlY-coating on the surface of a single crystal article, such as a nickel base superalloy, the method comprising the steps of coating the article only at a local area with the MCrAlY-coating by an electroplated method (column 7 lines 58-62). The gamma/gamma prime and gamma/beta MCrAlY-coating is a product made by the process of electroplating. Since the MCrAlY-coating of Foster '205 is made by the same process as that of the instant claim, the MCrAlY-coating of Foster '205 would be either a gamma/gamma prime or gamma/beta MCrAlY-coating. The instant disclosure fails to disclose any processing conditions that would distinguish the MCrAlY-coating of the

Art Unit: 1753

instant claims from that of Foster '205. Foster '205 thus meets all the limitations of this claim.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan V. Van whose telephone number is 571-272-8521. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LVV
2/14/2005


NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700